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Third Quarter FY 2001 Operations Report for Test Area North Final Groundwater Remediation Operable Unit 1-07B

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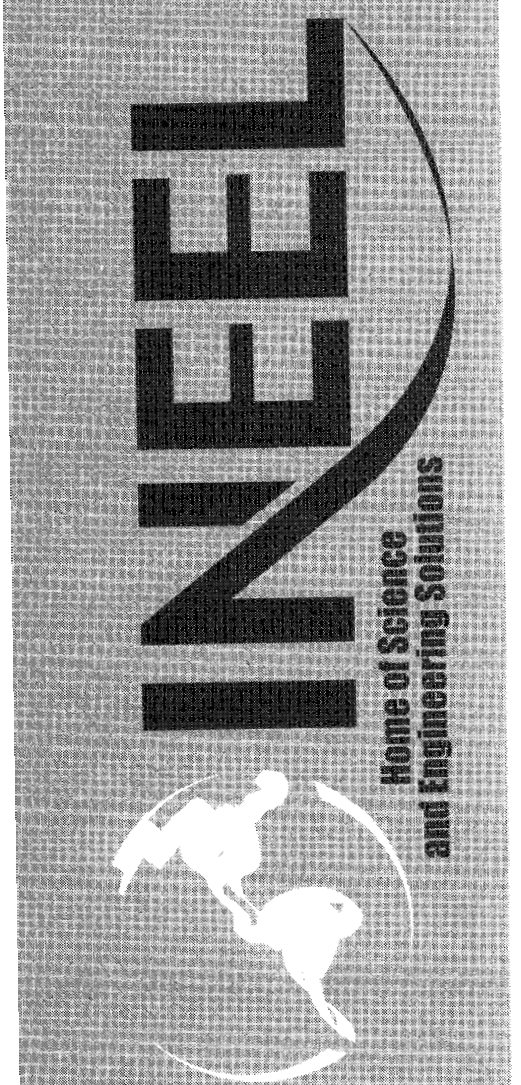

Idaho National Engineering and Environmental Laboratory
Bechtel BWXT Idaho, LLC

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Third Quarter FY 2001 Operations Report for Test Area North Final Groundwater Remediation Operable Unit 1-07B

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ABSTRACT

This report has been prepared to meet the operational reporting requirements of Section 4.2 of the *Remedial Action Work Plan Test Area North Final Groundwater Remediation—Phase B Operable Unit 1-07B.* The reporting period is April 1 through June 30, 2001. This report provides a summary of treatment system operations and other field activities that occurred during the third quarter of Fiscal Year 2001. The Operable Unit 1-07B remedial action field activities include hot spot containment treatment system operations, construction and maintenance, in situ bioremediation pre-design operations (including sampling and facility operations), and waste management.

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TABLES

ACRONYMS

ASTU	Air Stripper Treatment Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE-ID	Department of Energy Idaho Operations Office
FY	fiscal year
GWTF	Groundwater Treatment Facility
INEEL	Idaho National Engineering and Environmental Laboratory
ISB	in situ bioremediation
NCR	Nonconformance Report
NPTF	New Pump and Treat Facility
OU	operable unit
PDO	pre design operation
PPE	personal protective equipment
TAN	Test Area North
TSF	Technical Support Facility
WO	work order

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1. INTRODUCTION

This report has been prepared to meet the operational reporting requirements of Section 4.2 of the *Remedial Action Work Plan Test Area North Final Groundwater Remediation—Phase B Operable Unit 1-07B* (DOE-ID 1999). The reporting period for this report is from April 1 through June 30, 2001. This report provides a summary of treatment system operations and other field activities that occurred during the third quarter of Fiscal Year (FY) 2001. The Operable Unit (OU) 1-07B remedial action field activities included:

- In situ bioremediation (ISB) pre-design operations (PDOs) (including sampling and facility operations)
- New Pump and Treat Facility (NPTF) construction
- Air Stripper Treatment Unit (ASTU) maintenance
- Groundwater monitoring
- Waste management.

This report provides the highlight of these field tasks; identifies any significant events, problems, or concerns; and provides the results of treatment system compliance monitoring. In addition, this report includes the quantity of water processed and the source of the water. The operational uptime calculations were not required for this quarter for the ASTU, Groundwater Treatment Facility (GWTF), and the NPTF. Finally, this report provides a waste inventory summary and any changes to the status of the waste inventory.

2. FIELD ACTIVITIES AND HOT SPOT TREATMENT SYSTEM OPERATIONS

This section is a summary of field activities and hot spot treatment facility operations that include significant events, problems and/or concerns, the source and quantity of water processed through the hot spot treatment facilities, and associated operational uptime.

2.1 Field Activities and Hot Spot Treatment System Operations and Significant Events

2.1.1 Groundwater Treatment Facility

The GWTF remained in a standby condition throughout this performance period. Periodic operation of the GWTF was performed, as necessary, to maintain process equipment and store purge water from sampling activities. Other activities were as follows:

- During the week of May 14, 2001, pump (P)-5 was replaced and the activities necessary to process and dispose of the stored water from tank T-1 were begun.

- While testing equipment prior to GWTF processing during the week of May 21, 2001, pump P-3 emitted a loud noise and was secured. During the week of June 25, 2001, P-3 pump motor was replaced.

2.1.2 Air Stripper Treatment Unit

The ASTU remained in a secure condition throughout this quarter. However, maintenance was performed on the TAN-29 pump. The TAN-29 pump was removed during the week of April 9, 2001 because it was discovered to be separated one joint above the discharge pipe. The pump was not replaced; however, material was staged for replacing the pump with stainless piping and wire.

2.1.3 New Pump and Treat Facility

The following NPTF activities took place during the reporting period:

- Prepared for the NPTF Pre-Final Inspection during the week of April 2, 2001.

- During the week of April 2, 2001, the construction contractor worked punch list items; asphalt is the only remaining item to complete.

- The NPTF Pre-Final Inspection was completed during the week of April 9, 2001.

- The construction contractor completed NPTF asphalt paving during the week of April 16, 2001. Punch list items were also completed.

- The NPTF integrated test was started during the week of April 23, 2001. Experienced an unplanned shutdown on day 2 because of an undersized motor starter for P-40. The motor started was replaced and the integrated test was resumed.

- The NPTF integrated test continued with no problems from weeks of April 30, 2001 through May 14, 2001.

- The NPTF monitoring well transducer network was installed and operational during the month of April.

- The NPTF air stripper efficiencies were measured during the week of May 21, 2001.

- A Nonconformance Report (NCR) was issued on May 30, 2001, regarding the A-310 and A-311 air strippers' removal efficiency required in the NPTF design. The construction contractor is investigating the situation, but will likely add another tray to each stripper.

- Additional testing was performed on the A-310 and A-311 air strippers, using vendor supplied parameters to evaluate efficiency prior to adding trays, during the week of June 18, 2001.

2.1.4 ISB Field Evaluation

2.1.4.1 Nutrient Injection System—The sodium lactate injection strategy used during the third quarter included injecting a 6.0% solution of sodium lactate into Technical Support Facility (TSF)-05 at 40 gallons per minute (gpm) once every 2 months. On May 2, 2001, 24 drums of 60% solution were injected into TSF-05 at 4 gpm concurrent with 36 gpm of potable water, resulting in 13,200 gal of 6% lactate. A 1-hour potable water flush at 36 gpm followed, which resulted in 2,160 gal water.

2.1.4.2 ISB Field Sampling—Monthly sampling was performed on April 16, 2001, May 7, 2001, and June 4, 2001 in accordance with the *Sampling and Analysis Plan for Enhanced In Situ Bioremediation Predesign Operations Test Area North, Operable Unit 1-07B* (INEEL 2001a).

2.1.5 Groundwater Monitoring Field Activities

Groundwater monitoring activities were not conducted during this quarter.

2.1.6 Other OU 1-07B Field Activities

During this period, the following daily, weekly, and monthly inspections took place in accordance with project procedures, plans, and agreements with the Agencies:

- Daily Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) inspections

- Weekly inspections of eyewashes, first aid kits, and the decontamination trailer

- Weekly temporary accumulation area inspections

- Monthly inspections of the ground fault circuit interrupter, fire extinguishers, emergency lights, tank alarms, spill kits, and the decontamination personal protective equipment (PPE) kit.

Other activities are as follows:

- A RediFlo-2 pump was placed in TAN-29 at 260 ft below land surface (bls) to allow for ISB sampling during the week ending April 22, 2001.

- A Facility Excellence tour of TAN-1611 was completed during the week ending May 6, 2001. The facility received a 9.4 rating.

2.2 Facility Operations

This section covers the source and quantity of water processed.

2.2.1 GWTF Operations

There was no water treated or discharged from the GWTF during this quarter because of the ISB PDOs. However, ISB sampling purge water was placed into Surge Tank T-1. Table 1 is a summary of all the sources of water that were transferred to the GWTF.

Table 1. Purge water to the GWTF.

From Wells	Date	Volume added to GWTF (gal)
TSF-05	April 16, 2001	50
TAN-25	April 16, 2001	50
TAN-28, TAN-30A, TAN-37A, TAN-37B, TAN-25, TAN-26, TSF-05 (A&B), TAN-31, TAN-D2, TAN-27, and TAN-10A	May 13, 2001	800
Total for the Quarter		900

2.2.2 ASTU Operations

The ASTU was in a secure standby condition throughout this quarter.

Purge water from the ISB sampling activities was processed through the ASTU intermittently throughout the reporting period. Table 2 provides the quantities of the purge water processed through the ASTU during this quarter.

Table 2. Purge water processed through the ASTU.

Wells/Sources	Date	Volume (gal)
TAN-28, TAN-30A, TAN-26, TAN-37A, and TAN-37B	April 16, 2001	386
TAN-31, TAN-D2, TAN-29, TAN-10A, and TAN-27	April 17, 2001	260
Total for Quarter		646

A processing summary for the ASTU from November 1998 through June 2001 is provided in Appendix A.

2.2.3 NPTF Integrated Testing

Starting in June, the NPTF was operated to process ISB purge water and to perform integrated testing. Table 3 provides information regarding the purge water processing during this period.

Table 3. ISB purge water blended at NPTF with TAN-39 and TAN-40 water.

Wells/Sources	Date	Volume (gal)	Ratio
TAN-D2, TAN-26, TAN-27, TAN-28, TAN-29, TAN-30A, and TAN-10A	June 6, 2001	409	100:1
TAN-25, TAN-31, TAN-37A, TAN-37B, TSF-05A, and TSF-05B	June 6, 2001 and June 7, 2001	331	500:1
Total for Quarter		740	

2.3 Operational Uptime

There were no operational uptime requirements for this quarter because of the following:

- The GWTF is in standby mode throughout the duration of the ISB field evaluation
- The ASTU was in a secure condition and only purge water from the ISB sampling activities was processed through the ASTU intermittently
- The NPTF was not yet operational during this quarter.

3. OPERATIONS ISSUES

The only operational issue for this quarter was with regards to the NPTF's removal efficiency. On May 30, 2001, an NCR (2001) was submitted against the NPTF air strippers' contractor for not achieving the removal efficiencies for volatile compounds required by the construction specification. The contractors are currently in the process of correcting the NCR.

4. COMPLIANCE MONITORING

The were no compliance monitoring requirements for OU 1-07B during this quarter.

4.1 Compliance Sampling and Analysis

The NPTF was not yet operational; however, the facility was put through shakedown operations, which included blending purge water (see Section 2.2.3). The *New Pump and Treat Facility Final Inspection Report* (INEEL 2001b) documents these shakedown operations, which provide a check to ensure that all regulatory requirements are satisfied.

4.2 Performance Evaluation Sampling and Analysis

Monthly performance evaluation samples were not analyzed during this quarter because sample management was being reevaluated. Performance evaluation sampling will be reinstated in the first quarter, fiscal year 2002.

5. WASTE INVENTORY SUMMARY

The following waste inventory information (see Table 4) summarizes the waste being stored in the CERCLA Waste Storage Units (CWSUs) during April, May, and June of 2001. No waste was generated or removed during the third quarter of FY 2001.

Table 4. Third quarter FY 2001 waste inventory.

Category	Waste	Unit	Generated	Currently Stored	Removed	Shipping Date
1	Bag filter, PPE, and miscellaneous	55-gal drum	0	17	0	N/A
2	Spent carbon	55-gal drum	0	0	0	N/A
3	Spent resin	55-gal drum	0	1	0	N/A
4	TAN-31 drill cuttings	2 × 4 × 8-ft box	0	5	0	N/A
5	TAN-37 drill cuttings	2 × 4 × 8-ft box	0	0	0	N/A
6	TAN-37 and TAN-48 drill cuttings	4 × 4 × 8-ft box	0	0	0	N/A
7	GWTF piping and parts	4 × 4 × 8-ft box	0	4	0	N/A
8	Brass material	20-gal drum	0	1	0	N/A
9	Tracer test material	55-gal drum	0	2	0	N/A
10	Bag filter rings	55-gal drum	0	1	0	N/A
11	ISB test kit waste	55-gal drum	0	3	0	N/A
12	Miscellaneous waste	30-gal drum 5-gal drum	0	1 1	0 0	N/A N/A
13	Sampling equipment	55-gal drum	0	1	0	N/A

6. REFERENCES

DOE-ID, July 1999, *Remedial Action Work Plan Test Area North Final Groundwater Remediation—Phase B Operable Unit 1-07B*, DOE/ID-10629, Revision 0, U. S. Department of Energy Idaho Operations Office.

INEEL, May 1999, *Sampling and Analysis Plan for the Enhanced In Situ Bioremediation Field Evaluation Test Area North, Operable Unit 1-07B*, INEEL/EXT-98-00421, Revision 1, Idaho National Engineering and Environmental Laboratory.

INEEL, May 2001a, *Sampling and Analysis Plan for Enhanced In Situ Bioremediation Predesign Operations Test Area North, Operable Unit 1-07B*, Revision 1, Idaho National Engineering and Environmental Laboratory.

INEEL, September 2001b, *New Pump and Treat Facility Final Inspection Report*, INEEL/EXT-01-01292, Revision 0, Idaho National Engineering and Environmental Laboratory.

NCR 24108, 2001, "NPTF Air Stripper NCR," Nonconformance Report, Form 230.01, Bechtel BWXT Idaho, LLC, May 30, 2001.

Appendix A

OU 1-07B ASTU Processing Summary

Table A-1. OU 1-07B ASTU processing summary.

Date	Flow Totalizer Reading	Quantity of Water From Each Well (gal)			Monthly Operation Uptime (%)[a]	Comments
		TAN-29	Other	Total		
November 16, 1998	0	—	—	—	—	Beginning of Processing
November 30, 1998	1,080,000	1,080,000	—	1,080,000	100	Total of continuous operations and other
January 3, 1999	2,232,000	2,226,206	5,794	2,232,000	91	Other=well purge
QUARTERLY TOTAL		3,306,206	5,794	3,312,000	94	First quarter operational uptime
January 25, 1999	1,480,284	1,480,000	—	1,480,284	93	—
February 22, 1999	1,994,449	1,994,449	—	1,994,449	99	—
March 29, 1999	2,540,850	2,539,136	1,714	2,540,850	101	—
QUARTERLY TOTAL		6,013,869	1,714	6,015,583	98	Second quarter operational uptime
April 26, 1999	2,065,200	2,065,200	—	2,065,200	102	—
May 31, 1999	2,346,100	2,346,100	—	2,346,100	93	—
June 28, 1999	1,970,000	1,957,619	12,381	1,970,000	98	—
QUARTERLY TOTAL		6,368,919	12,381	6,381,300	97	Third quarter operational uptime
July 25, 1999	2,027,800	2,008,024	19,776	2,027,800	104	—
August 29, 1999	2,519,065	2,518,258	807	2,519,065	100	—
October 3, 1999	2,646,600	2,645,690	910	2,646,600	105	—
QUARTERLY TOTAL		7,171,972	21,493	7,193,465	103	Fourth quarter operational uptime
YEAR-TO-DATE TOTAL		22,860,966	41,382	22,902,348	98	Annual Operational Uptime (FY 1999)
October 31, 1999	2,200,000	2,197,607	2,393	2,200,000	109	—
November 30, 1999	2,286,300	2,284,538	1,762	2,286,300	106	—
December 31, 1999	2,236,700	2,235,947	753	2,236,700	100	—
QUARTERLY TOTAL		6,718,092	4,908	6,723,000	105	First quarter operational uptime

Table A-1. (continued).

Date	Flow Totalizer Reading	Quantity of Water From Each Well (gal)			Monthly Operation Uptime (%)[a]	Comments
		TAN-29	Other	Total		
February 1, 2000	2,110,300	2,109,306	994	2,110,300	95	—
March 1, 2000	2,016,500	2,015,691	809	2,016,500	97	—
April 1, 2000	2,307,600	2,306,629	971	2,307,600	103	—
QUARTERLY TOTAL		6,431,626	2,774	6,434,400	98	Second quarter operation uptime
May 1, 2000	2,257,143	2,250,284	6,859	2,257,143	104	—
May 30, 2000	2,195,000	2,194,071	929	2,195,000	105	—
June 26, 2000	1,953,120	1,937,040	16,080	1,953,120	100	—
QUARTERLY TOTAL		6,381,395	23,868	6,405,263	103	Third quarter operation uptime
July 24, 2000	2,142,100	2,125,168	16,932	2,142,100	106	—
August 27, 2000	2,597,865	2,571,761	26,104	2,597,865	106	—
October 1, 2000	2,560,265	2,559,937	328	2,560,265	102	—
QUARTERLY TOTAL		7,256,866	43,364	7,300,230	105	Fourth quarter operation uptime
YEAR-TO-DATE TOTAL		26,787,979	74,914	26,862,893	103	Annual Operational Uptime (FY 2000)
October 29, 2000	1,678,300	1,677,729	571	1,678,300	83	—
November 26, 2000	2,113,000	2,110,997	2,003	2,113,000	105	—
December 13, 2000	2,025,785	2,023,378	2,407	2,025,785	80	—
QUARTERLY TOTAL		5,812,104	4,981	5,817,085	89	First quarter operation uptime
January 31, 2001	—	0	2,704	2,704	—	Other=well purge
February 28, 2001	—	0	2,218	2,218	—	Other=well purge
March 31, 2001	—	0	648	648	—	Other=well purge
QUARTERLY TOTAL		0	5,570	5,570	—	Second quarter operation uptime

Table A-1. (continued).

Date	Flow Totalizer Reading	Quantity of Water From Each Well (gal)			Monthly Operation Uptime (%)[a]	Comments
		TAN-29	Other	Total		
April 30, 2001	—	0	646	646	—	Other=well purge (includes water from TAN-29)
May 31, 2001	—	0	0	0	—	—
June 30, 2001	—	0	0	0	—	—
QUARTERLY TOTAL		0	646	646	—	Third quarter operation uptime
GRAND TOTAL		55,461,049	127,493	55,588,542	98	Total Operational Uptime (from Nov. 16, 1998)

a. The operational uptime requirement for the ASTU is 80% during normal operational time periods through the first 6 months of operation. This requirement does not apply during periods of planned downtime.